

CLINICAL MEDICINE

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*Noble, R. L. (1946), Treatment of Experimental Motion Sickness in Humans, Canadian J. Research, Section E, 24:10.



CLINICAL MEDICINE

MARCH, 1949

Editorial

The Basic Conflict Between General Practitioners and Specialists

THE general practitioner is often accused of being in conflict with the specialist, by refusing to refer patients to him, and in other manners. Actually, the case is this, general practice includes a few cases from each specialty. Most of these cases can be cared for by the general practitioner as well as by the specialist; a fact that the honest specialist will be glad to acknowledge as being true.

The corollary is that the general practitioner should take care of the simpler uncomplicated conditions in which his training and experience will give the patient good care, and he should refer those patients whom he cannot successfully diagnose or treat.

If this procedure was followed, the general practitioner would be very happy. In fact, it is the general practitioner's referral of patients that has built up the reputation and remuneration of the most famous specialists and clinics.

Instead of this, many specialists feel that they should take care of all conditions in their field. For example, some obstetricians freely state that all deliveries should be cared for by obstetricians. Otolarynologists feel that every sore throat or cold should be treated by them, the general surgeon feels that an appendectomy will certainly be bungled if a physician other than a long-time, trained surgeon does the work, the internist feels that no one can give insulin properly, treat a pneumonia, and so on, without having at least a diploma from a specialty board.

Of course, these are exaggerations, but not too much so when one reads the various activities of the special boards which are endeavoring to restrict hospital staff physicians to those men who are diplomates of the various national boards. Apparently, these men do not realize that it is only in the large cities that the specialists are available enough

for the easy referral that should characterize modern practice. In many parts of the country, the physician and his patient are from 50 to 200 miles away from the nearest specialist, and the more common type of specialist at that.

There need be no conflict between the general practitioner and the specialist, if the specialist would realize that the general practitioner can take care of the simpler conditions in his field—if the specialist would refer patients back to the general practitioner, after completion of his specialized diagnostic or therapeutic management, and if he would, whenever he felt it was justified, say something complimentary about the way in which the general practitioner has managed the case to date—and if the family physician, upon seeing the possibility of serious complications, promptly referred the pa-

tient. The general practitioner praises specialists and clinics all the time to get the patient to go to them. It is only fair play that the specialist return some of the compliments.

The general practitioner can do his bit by remembering the one golden rule that the patient must receive the best possible care regardless of who gives it. If he himself would undergo his own care, in a condition presenting itself, his care will be safe. If he is not sure of a diagnosis, or treatment, the honest thing to do is to refer that patient. He should not suggest that the patient call in a specialist—he must insist whenever there is any possibility of serious complications occurring.

On both sides, remember that there is a total job to be done and that each can do only part of it. Then there will be no conflict.

Public Relations

IT WAS my misfortune the other night to have to listen to a doctor addressing a meeting of a mental hygiene society. I say "misfortune" because it pained me to see a doctor represent so badly a learned profession. He slouched over the speaker's standard, occasionally upsetting the microphone. He leaned on his arm with his hand in front of his face so that his words were hardly audible. And as a final fault his material was so unorganized that the best members of the audience could bet and carry away were scraps of ideas and quips supposedly humorous.

Years ago, in our town, the doctors got the idea that they should educate the public on medical matters. They went about it by hiring a coach in public speaking and then delivered talks before their group before they started to talk to the laity. It made better

speakers of us all and showed us what was needed if we wished to educate the public. It proved to us that because we were doctors of medicine we were not thereby necessarily good public speakers.

So, it is conceited for a doctor to go before a group of laymen and believe that his tongue will be touched by fire from the altar and he will be inspired what to say in that moment of trial.

On the other hand, it is worth while for doctors to appear in public and plead the cause of public health and preventive medicine. It seems to me the best way to find the solution for the various problems now confronting us—hospital support, medical care of the indigent, and the public understanding of what the practice of medicine means.—G. H. H.



Original Articles

Silver Protein Treatment of the Cauterized Cervix

By KARL JOHN KARNAKY, B.A., M.D.
Houston, Texas

AFTER cauterization, coagulation and conization of the cervix, there is a mild to severe infection of the treated area or areas. There is almost always a severe profuse, purulent leukorrhea which contains various kinds of bacteria, especially pyogenic microorganisms. There is always a slough formed on the treated area which falls off on the fourth to the thirteenth post operative day and may result in a hemorrhage. The odor can be offensive and is very much objected to by the patient.

There are several drugs that have been advocated and used in post operative treatment for cervicitis. Recently, there are other preparations which are being offered to the medical profession because of some advantages they offered over previous preparations. These should be checked for the medical profession. The one used in this study is silver protein*, a preparation which contains one of the tested and tried drugs; namely, argyrol. Argyrol has been used successfully for years in pyogenic infections in various parts of the body. In post operated, cauterized, coagulated, and coned cervixes there is usually a severe pyogenic infection of the cervix, so it was thought that this silver protein preparation should be tried, in such cases, in order to see if it could be advocated to the medical profession.

Method

Thirty cervixes which were treated by conization, 15 by coagulation and 10 by cauterization, were studied in this series in order to evaluate the preparation. Also silver protein was used in 6 cases of *Trichomonas vaginalis*, 12 cases of *Monilia albicans* and 12 cases of pyogenic infection of the vagina and cervix.

As soon as the patient has been treated by conization, coagulation or cauterization, one half of a cotton ball is

* From the Menstrual Disorder Clinic, Research Division, Jefferson Davis Hospital and Baylor University, College of Medicine, Permission to do this work was granted by the Research Committee, Jefferson Davis Hospital.

* Argypulvis—argyrol, kaolin, lactose preparation. A. C. Barnes Company, New Brunswick, New Jersey.

placed snugly against the area. Three to six argypulvis capsules are inserted around the cervix on the fornices. The rest of the vaginal vault is tightly packed with medium sized cotton balls. Twice a week for three weeks the vaginal pack is removed and a new pack inserted. If the vaginal vault is not dry, the number of silver protein capsules is increased by one or two at subsequent treatments. If necessary, a perineal pad may be worn to hold in the pack and to absorb any excess drug that may escape from the vagina.

There is a slight amount of the dissolved powder which may pass out of the vagina and onto the perineum when not enough capsules of the drug have been inserted into the vagina or when the resulting post operative secretion is greater than that absorbed by the powder in the capsules.

Toxicity Study

In order to see if there was any toxicity of argyria from the use of this drug, six white patients (whose skin was very white) were asked to insert one capsule of silver protein night and morning followed by cotton balls and perineal pads to hold in the powder. One patient used the capsules in the above manner for one month, three patients for two months, one patient for three months and one patient for four months, totaling 840 capsules. In this series of patients there was no evidence of toxicity from the silver protein, nor have we observed toxicity in any patient treated with silver protein.

Laboratory studies before during and after treatment with silver protein consisted of bleeding and coagulation time, complete blood counts, urines, sedimentation rate, blood chemistry examinations (Cholesterol, chlorides, uric acid, calcium, phosphate and glucose fasting).

Fresh smears were taken for *Monilia albicans*, *Trichomonas vaginalis* and

various kinds of bacteria, routine sterile cultures of various types of moulds and bacteria, and vaginal biopsies at various intervals to see the effect on the vaginal mucous membrane.

There has been no generalized reaction, no cervical, vaginal or perineal reaction observed. If the crystals become too concentrated around the introitus and on the perineum, then there have been some complaints of itching. This discomfort is easily eliminated by simply washing off excess crystals with plain warm water.

Results

The malodorous discharge usually accompanying post operative conization, coagulation and cauterization is eliminated; there is very little or no purulent leukorrhea; the vagina becomes dry; the slough formed is thin and therefore healing is aided because of the destruction of the pyogenic bacteria by the drug.

The patients with *Trichomonas vaginalis* and *Monilia albicans* were free of pyogenic infection after 6 months when the patient inserted one capsule night and morning, with no douches, for 12 days.

Conclusions

Another drug has been added to our treatment of post cauterized, post coagulated and post coned cervixes. It has also been found of value in vaginitis due to *Trichomonas vaginalis*, *Monilia albicans* and pyogenic infections of the vagina.

329 Medical Arts Building.

Acknowledgements to:

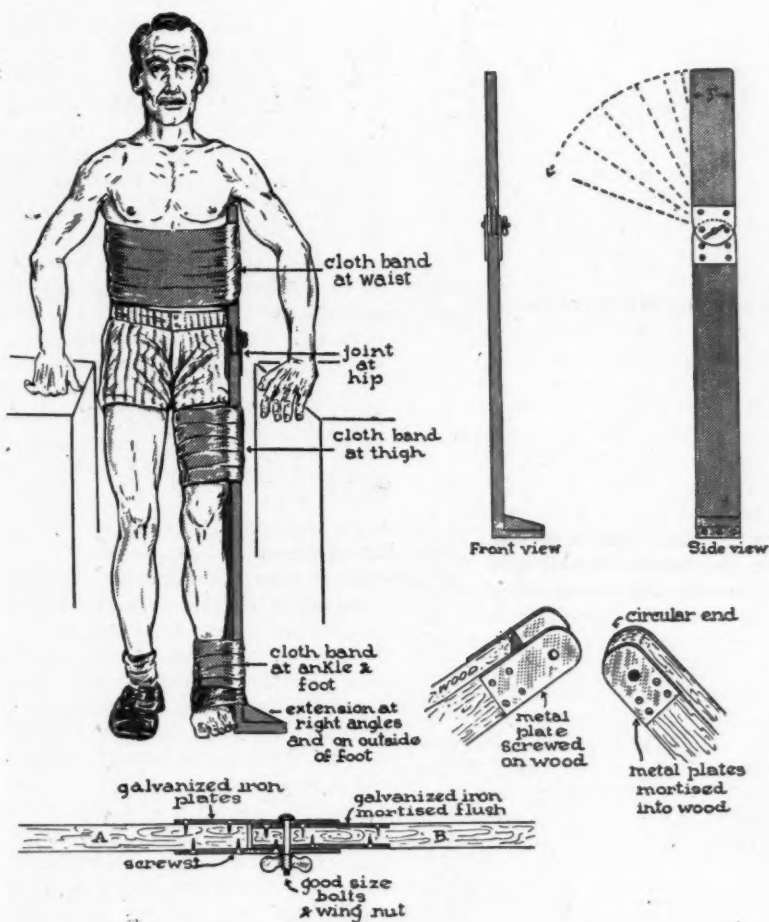
Dr. J. W. Pope, Dr. R. Atkins, Dr. A. W. White, and Dr. A. T. Talley, Jr., our Obstetrical and Gynecological Residents, and Internes, who carried out these studies.

Lofgren Splint for Fractured Hips

Emil Lofgren, M.D., of Rockford, Illinois, writes concerning his splint for fractured hips, which cannot be nailed. It is based upon the Thomas splint but is hinged at the level of the trochanter, so that it will change angle as the patient sits down. It is held in place by

bands around the waist, thigh and leg (the artist's conception is not quite correct). Rotation of the foot outward is prevented and early ambulation is encouraged.

(119 Summit Street, Rockford).



Management of the Cardiac Outpatient

By DONALD B. FRANKEL, M.S., M.D.

Fairfield, Illinois

THE generalized lack of hospital facilities today necessitates home or office treatment of the ambulatory patient with chronic cardiac decompensation. Treatment must be aimed at rapid and safe symptomatic relief, as well as at control of the failing heart. In our experience Meralluride sodium (*Mercurhydrin*)*, a mercurial diuretic, achieves these goals with greater safety and efficiency than has been possible heretofore.

Mercurials are the most powerful diuretic agents known. In 1928 Govaerts proved conclusively that the action of mercurials is directly upon the kidney. Walker, in 1937, proved that mercurials effect diuresis by reducing tubular reabsorption of water. Some investigators affirm the presence of extra-renal influence of mercurials but there is no disagreement as to diuretic potency.

The source of the fluid excreted by the kidneys is the blood. Edema is reduced as fluid leaves the tissues in response to the blood's decreased osmotic pressure. Circulatory and renal functions are then restored. Normal excretion of remaining fluid excesses follows and is more or less maintained once the kinetics of diuresis has been established.

This study is based on the records of 98 cardiac patients. They were selected impartially and upon admission to the groups comprising this study were placed into two groups: Group A, receiving *Mercurhydrin*; group B, not receiving *Mercurhydrin*. There were forty-seven patients in group A from the time

of their admission. Six patients whose progress in the control group B was not satisfactory, were transferred to group A. Forty-five patients in group B did not receive any mercurial diuretic.

Procedure

All patients were digitalized, instructed on sodium free diet and, where necessary, put on bed rest. Fluid intake was not limited. All patients received ammonium chloride 60 to 75 grains daily. As ammonium chloride potentiates the diuresis caused by Meralluride sodium, patients in Group A received the first injection of 2 cc. after four days on the above treatment. Where the edema was severe 2 cc. of *Mercurhydrin* were given daily for the first week; thereafter, the same dose every two or three days until the patients reached "dry weight." After "dry weight" was reached, one or two weekly injections were used to continue the treatment. This was done for every patient in group A.

Digitalization was carried out with an initial dose of 1.2 mg. of digitoxin in divided doses of .6 mg. each. This was followed, beginning with the second day, by daily doses of .1 mg. once or twice daily, depending on the relative severity of the decompensation. There were 18 patients in the control group B that needed .2 mg. daily for fourteen days or more, but no patient in the A group needed .2 mg. daily for more than three days. As a general rule, the control patients took more digitoxin for longer periods of time. Maintenance dosage for both groups was .1 mg. daily for fourteen days or more, but no pa-

* Lakeside Laboratories, Inc., Milwaukee 1, Wis.

tient in the A group needed .2 mg. dosage for both groups was .1 mg. daily.

Both groups received ammonium chloride (60-75 grains) daily for two weeks. The two weeks with ammonium chloride plus one week without was considered a "course." All patients received this course until "dry weight" was established, or gastric intolerance developed. Patients in group A took an average of 1.5 courses of ammonium chloride, while those patients in the control group B averaged 3.5 courses. It should be noted that gastric intolerance developed more frequently in group B, though this may be attributed to the hepatic enlargement and gastric engorgement persisting for a longer time.

Bed rest was insisted upon only for those patients who were seriously decompensated. Some of the patients of both groups receiving their medication and injections in the office drove as much as 35 miles for their treatment.

Results and Discussion

In comparing the progress of the two groups the differences were marked. The rapidity with which the patients in the A group reached and maintained "dry weight" was definitely not seen in the control B group. The symptoms disappeared more rapidly in the A group patients, especially the nocturnal dyspnea, and the dependent edema.

Of the original 51 patients in the control B group, 6 were transferred to group A because the original treatment without Meralluride sodium was not relieving the symptoms or controlling the edema satisfactorily. When this was done, the resultant effects soon became apparent in that their weights dropped faster, and in one case dyspnea had entirely disappeared twenty-four hours after the third injection.

Mercuryhydrin proved to have many advantages, chiefly that it caused a rapid and continuous diuresis, and thus rapid relief for the patient. It was uni-

formly well tolerated, and in no patient was there any reaction.

Intramuscular injections gave as good a result as intravenous injection, and the only need for the latter was the immediate diuresis necessary to relieve the paroxysmal dyspnea or the severe cardiac asthma.

Another advantage was the ease of maintaining the "dry weight" with only one or two injections per week. Some patients, after the daily injections ceased to cause significant weight loss, needed only one injection per week to keep their weight constant and their symptoms at a minimum.

There were two patients who had begun with signs of a rather severe kidney damage. These patients were not given more than 1 cc of *Mercuryhydrin* per dose, and at no time were there any untoward effects.

Some diuresis was observed in patients with no demonstrable edema, indicating the removal of occult edema. Patients with cardiac asthma, and no demonstrable edema, also received gratifying relief, though no diuresis was reported by the patient.

Conclusions

Ninety-eight patients with clinical cardiac decompensation were treated as out-patients. Meralluride sodium proved to be a necessary part of the therapy for chronic cardiac decompensation.

1. Meralluride sodium (*Mercuryhydrin*) caused no local or systemic reaction in any patient and was well tolerated by all;
2. It is as effective by the intramuscular route as by the intravenous and displayed a rapid and dramatic effect in every case;
3. It is not necessarily contraindicated in cases with kidney damage;
4. It is as important as any other factor in the emergency treatment of paroxysmal nocturnal dyspnea and cardiac asthma.

Clinicopathologic Conference (18)

A SIXTY-FIVE year old white woman entered the hospital because of upper right quadrant pain of two months' duration. The pain had been almost constant, severe at times and had been accompanied by anorexia and a weight loss of about twelve pounds.

The history was not remarkable except for a hysterectomy and removal of ovarian tumors thirty years previously. There had been several attacks of pleurisy over a period of years and recurrent attacks of cystitis in the distant past. Close questioning elicited a history of indigestion associated with bloating and upper abdominal pain at intervals during the preceding twenty years. There had never been any jaundice. Constipation was occasionally relieved by the use of cathartics.

Examination revealed a well developed and well nourished woman in no distress. There was tenderness to deep palpation in the right upper quadrant. No masses could be felt and the liver was not palpable. The spleen was not palpable. The heart and lungs were clear and the blood pressure was normal. Pelvic and rectal examinations were normal. The urine was normal and the blood count was not remarkable. Hemoglobin was 12.5 grams. A flat-plate of the abdomen revealed no urinary or biliary calculi and a gallbladder dye series showed the presence of a non-functioning gallbladder.

What is the diagnosis and what treatment or further diagnostic procedures are indicated?

Operation. An exploratory laparotomy revealed an enlarged, thick-walled gallbladder with a contraction about the neck due to the growth of a neoplasm. The growth extended to the under surface of the liver and there were several metastatic nodules on the upper surface of the liver. The gallbladder contained about forty faceted stones av-

eraging about five centimeters in diameter. Biopsy was done and the gallbladder drained. The tissue removed showed adenocarcinoma. The patient's subsequent course was progressively downhill. E. G. BENJAMIN, M.D. of Minneapolis in *Minnesota Medicine*, March 1948)

Discussion

The history, symptoms and findings in this case are of benign biliary disease. Further laboratory and radiological studies would not have contributed to the ultimate diagnosis. Unfortunately, surgical intervention was too late for even palliative measures.

Carcinoma of the gallbladder causes about 5 per cent of all carcinoma deaths. Its incidence follows that of the stomach, colon and cecum, rectum and esophagus in regards gastrointestinal malignancy. In large series of operations on the gallbladder, carcinoma of the gallbladder is encountered in slightly over 1 per cent of cases. About 80 per cent of carcinomas of the gallbladder occur in women, in whom it comprises about 8 to 10 per cent of malignancies. The average age of patients in whom carcinoma of the gallbladder is discovered is about sixty years. The great majority of cases of carcinoma of the gallbladder have a history of gallstones prior to the development of the malignancy. Perhaps 5 percent of patients with stones develop carcinoma.

The most constant symptom is pain usually localized to the right upper quadrant. It is ordinarily dull and constant, but may be accompanied by colic. Anorexia is the rule and there may be vomiting, particularly if there is biliary obstruction. Jaundice occurs in 50 per cent of cases. A mass is palpable in about half of the cases, the liver is usually palpable and may exhibit nodules on its surface. There is usually a mild anemia.

Differential diagnosis includes malignancy of the stomach, of the liver and of the hepatic flexure of the colon and syphilis of the liver. *Carcinoma of the gallbladder is usually inoperable by the time the diagnosis is made.* (Why not advise removal of gallstones before

cancer appears? Ed.) The prognosis is uniformly bad. The majority of patients die within one year. Extension to the biliary axis and to the liver is usual; metastases to distant structures are not common. The liver is almost always involved at the time of operation.

Brucellosis (Undulant Fever)

Question:

What are the various types of Undulant or Malta Fever? How can one recognize them?—M. D., Grand Rapids, Michigan.

Answer:

The perfect diagnostic method is to isolate the brucella organism from the blood by blood culture, or from pus or other body discharge. The organism can be found more readily during the acute stages with fever. In the subacute and chronic cases, the agglutination test should be performed several times to see if there is any change, in the titer. A positive agglutination test in dilution of 1 to 80 or higher is very important, especially if repeated tests show a changing level of agglutination.

Chronic or recurrent cases are very difficult of diagnosis. The skin test (intradermal injection of one tenth cc. of Brucellergin or other test material) remains positive for years, just as does the tuberculin reaction. It is frequently positive in persons who are, and have been, perfectly well. If a thorough physical and laboratory examination does not reveal any other cause of weakness and

aching, one may give a therapeutic trial with small doses of brucella abortus vaccine or brucellin. Some persons respond dramatically to such therapy, and feel much stronger after several injections. To rule out the psychic factor, one may give injection of normal saline solution or other inert material.

Brucellosis appears as one of three types (which may be found in succession in the same patient) according to Forbus: 1. The acute speticemic type, in which the patient is critically ill, toxic, shows septic type of fever, brucella organisms are found on blood culture; 2. The localized subacute form including vegetative endocarditis on the heart valves, lesions in the meninges (meningitis) testis (chronic orchitis), vertebral and metatarsal bones (chronic osteitis) and joints (subacute arthritis); 3. Lymphogranulomatous or chronic type, with lesions in lymph nodes, spleen, liver, kidney, bone marrow.

For a very interesting summary, write to Carl F. Jordan, M.D., Iowa State Health Department, Des Moines, Iowa asking for a copy of "Brucellosis of Man or Undulant (Malta) Fever."

Treatment of Boils Without Incision

Question:

A girl of 17 has had repeated boils and abscesses, despite several types of therapy and failure to find any cause after complete physical and laboratory examinations. How may scarring be avoided?—M.D., Spencer, Iowa.

Answer:

Pencillin is given by intramuscular in-

jection once daily (300,000 units in oil) until the infections have localized. Then, when fluctuation has occurred, the pus is aspirated with a large (18 gauge) needle and replaced with penicillin dissolved in normal saline solution. Healing and absorption occur without scarring (Technic of Dr. H. J. Cohen, Lebanon Hospital, New York City).

Development in the Infant and Young Adult

(A SIMPLIFIED SKELETAL X-RAY STUDY OF THE HAND)

For use by the General Physician as an Index to Normal Development

PART II: FEMALES*

* Part I: Males appeared in the February 1949 Issue p. 27-33.



FIG. B. AGE STANDARD FOR
NEWBORN FEMALES

Newborn Females have on the average no ossification in the carpal area. The metacarpals and phalanges are well formed but there are wide cartilaginous spaces between the several bones of the hand. In rare instances the capitatum and hamatum may be present in nuclei but this condition is not typical of newborn girls. Carpal centers are present more frequently in female hands than in male hands at birth.

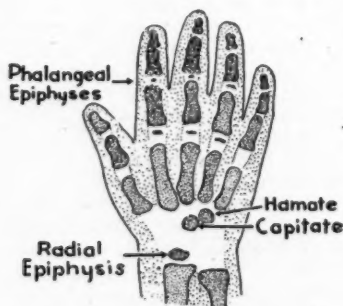


FIG. 1. AGE STANDARD FOR
ONE-YEAR-OLD FEMALES.

Average one-year-old girls have small centers for the capitatum and hamatum. The epiphysis on the radius is also present. Phalanges II, III, and IV in the proximal row have tiny epiphyseal nuclei. Epiphyses appear on the metacarpals and phalanges soon after the first birthday. Extra epiphyses may be present in the twelfth month without indicating marked acceleration.

DEVELOPMENT: FEMALES



FIG. 2. AGE STANDARD FOR TWO-YEAR-OLD FEMALES.

All metacarpal and phalangeal epiphyses should be present at the second birthday. Metacarpal epiphyses appear as little round balls. Variations in the appearance of epiphyses are to be expected for the following phalanges: I in the proximal row, V in the middle row, and II and V in the distal row. The triquetrum should be present as a tiny nucleus. The radial epiphysis, capitatum and hamatum have increased in size during the second year.



FIG. 3. AGE STANDARD FOR THREE-YEAR-OLD FEMALES.

Absence of any except the ulnar epiphysis at age three suggests retardation. The lunate should be present. The radial epiphysis has thickened on the outer edge and assumed a wedge-shaped appearance. The capitatum has become oblong while the hamatum is thicker on the distal end. Four carpal centers and the radial epiphysis are expected in the hands of three-year-old females.



FIG. 4. AGE STANDARD FOR FOUR-YEAR-OLD FEMALES.

Five carpal bones and the radial epiphysis should be present at age four. The fifth bone to appear may be the navicular, m. majus, or m. minus. There is much variation in the order of appearance of these three bones. Absence of an epiphysis on a metacarpal or a phalanx is a clear mark of retarded development. The radial epiphysis is still wedge-shaped but it has extended in a medial direction. Metacarpal heads may have flattened slightly on the proximal side.



FIG. 5. AGE STANDARD FOR FIVE-YEAR-OLD FEMALES.

Seven carpal bones should be present at this age. Metacarpal heads II and III have squared off on the proximal side to such an extent that they are somewhat D-shaped. Metacarpal heads IV and V are still relatively round. The carpal area is dotted with tiny carpal centers but there is still much cartilage to be penetrated. A faint indication of the saddle shape on the base of metacarpal II may be indicated.



FIG. 6. AGE STANDARD FOR SIX-YEAR-OLD FEMALES.

The ulnar epiphysis has made its appearance by age six. There is an extension of the D-shapedness in the metacarpal heads. Roundness may still appear in metacarpal V. There is a definite increase in the size of the carpal bones. The shadows of the *m. majus* and *m. minus* are usually in contact. The triquetrum is definitely larger than either the *lunatum* or *naviculare*. Carpal bones show little indication of their adult shape; most of them are still relatively round. The radial epiphysis has extended across the shaft but is still shorter than the width of the shaft.

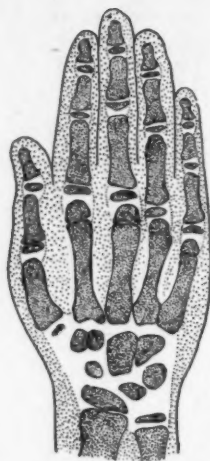


FIG. 7. AGE STANDARD FOR SEVEN-YEAR-OLD FEMALES.

There is an increase in bone size. The radial epiphysis has increased in length and breadth. Most of the changes are qualitative. Metacarpal II has developed a definite saddle-shape at the base. All of the metacarpal heads show a D-shape. Most of the epiphyses are still shorter than the width of the bones to which they unite. There is still much open space in the carpus but some of the shadows overlap slightly.

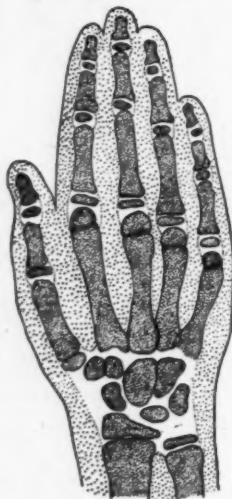


FIG. 8. AGE STANDARD FOR EIGHT-YEAR-OLD FEMALES.

Changes in size and shape of the bones are significant. The radial epiphysis has extended along the shaft. This epiphysis has increased in thickness on the outer side, a development which precedes the styloid process. The metacarpal heads are definitely D-shaped. The *lunatum*, *triquetrum*, and *naviculare* resemble somewhat their adult shape. They are nearly equal in size though the *triquetrum* is likely to be largest at this age. The *capitatum* and *hamatum* are nearly their adult shape. The ulnar epiphysis is still shorter than the width of the shaft, while the phalangeal epiphyses approximate the width of their respective phalanges.

DEVELOPMENT: FEMALES



FIG. 9. AGE STANDARD FOR NINE-YEAR-OLD FEMALES.

Changes between eight and nine are hard to detect; a correspondence to the same stage in boys' hands between ten and eleven. The pisiforme should be just appearing. Epiphyseal gaps have been reduced. The m. majus and m. minus show overlapping of shadows. A closer resemblance to the adult outline in shape of the bones may be observed. The ulnar epiphysis has extended nearly the width of the shaft.



FIG. 10. AGE STANDARD FOR TEN-YEAR-OLD FEMALES.

All carpal bones should be present. Overlapping of bone shadows is quite common. The ulnar epiphysis is likely to be the only shadow untouched by another. The m. majus casts its shadow on the second metacarpal and the hamatum on the fifth metacarpal. The radial epiphysis has begun to develop its ulnar beak. There are ulnar dense lines along the edges of the carpal bones. The ulnar and radial epiphyses are still round at the outer edges.



FIG. 11. AGE STANDARD FOR ELEVEN-YEAR-OLD FEMALES.

The carpal area is so full that the shadows may overlap in several directions. Epiphyseal gaps have been further reduced. The radial hook or beak is quite pronounced though there is still a roundness on the outer side. The dense lines along the edges of the bones are more pronounced. Practically all of the bones have their adult shapes. The pisiforme is usually quite small. The epiphysis on metacarpal I appears to be in contact on the outer edge. A sesamoid should be present at the distal end of the first metacarpal.

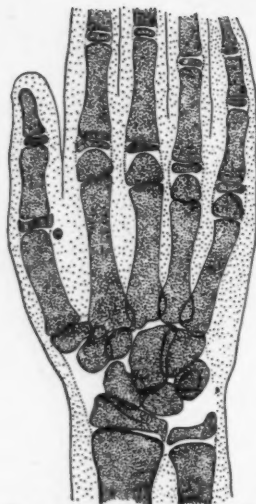


FIG. 12. AGE STANDARD FOR TWELVE-YEAR-OLD FEMALES.

The carpal area is so full of bone that there appears to be crowding. The metacarpal heads appear to be in readiness for union. The radial epiphysis has squared off on the outer edge and extended the ulnar hook down along the shaft. The gap between the epiphysis and metacarpal I is disappearing. Phalangeal epiphyses are in readiness for union. Future development can be seen only in the changes of epiphyses.



FIG. 13. AGE STANDARD FOR THIRTEEN-YEAR-OLD FEMALES

The metacarpal heads have started to fuse. The phalangeal epiphyses are still open. There is a definite parallelism between radial and ulnar epiphyses and their shafts. All of the epiphyses are in readiness for fusion. The carpal area seems filled to adult capacity. The navicular has come into a functional relationship with the radial epiphysis.



FIG. 14. AGE STANDARD FOR FOURTEEN-YEAR-OLD FEMALES.

All epiphyses show rapid progress toward union. All epiphyses in the distal part of the hand show union or near union. The line along which union is taking place can be seen. The radial and ulnar epiphyses are still ununited but they have come into contact at several points. The beaks which turn down on each side of the radial shaft are quite pronounced.

DEVELOPMENT: FEMALES

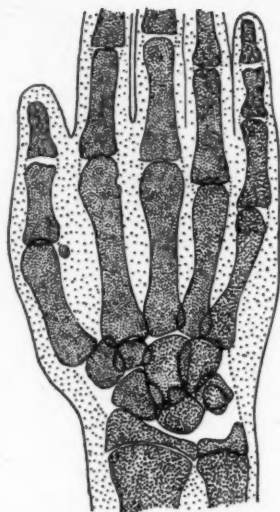


FIG. 15. AGE STANDARD FOR FIFTEEN-YEAR-OLD FEMALES.

Practically all epiphyses except the radial and ulnar epiphyses have united. Some of the epiphyses show recent union. There may be some gaps at the extreme outer edges. Beginning of union is evident in the radial and ulnar epiphyses. Both of these epiphyses turn down along the edges of the respective shafts.

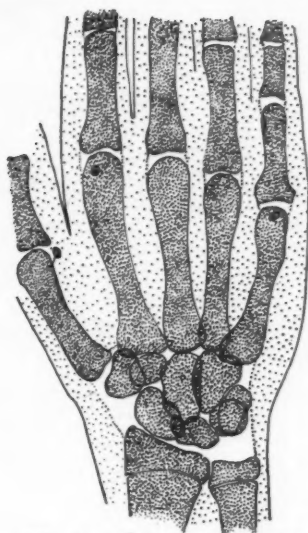


FIG. 16. AGE STANDARD FOR SIXTEEN-YEAR-OLD FEMALES

All epiphyses except the radial and ulnar epiphyses have completely fused by age sixteen. There are likely to be gaps at the outer edges of the radial and ulnar shafts. It appears that the skeleton of the sixteen-year-old females must be very near maturity. Points of difference in development after age sixteen are so slight that serious errors are likely to occur in placement by carpal development alone.

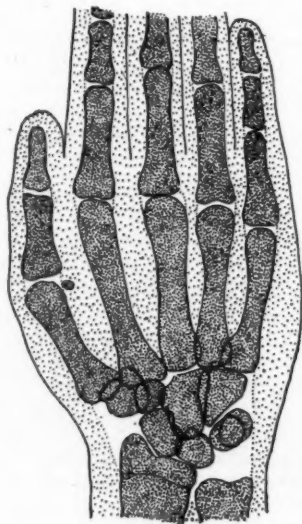


FIG. 17. AGE STANDARD FOR SEVENTEEN-YEAR-OLD FEMALES

The average female is skeletally mature at seventeen if roentgenograms of the hand can be used as a criterion. There is still a distinct line of epiphyseal closure on the radial shaft. In all other respects, the hand has its mature characteristics. Changes beyond age seventeen are to be found only in females who are retarded in development.



Problems in Practice

(CONSULTATION SERVICE)

Is Breast Cancer Tender and Painful?

Question:

May breast cancer be tender and painful? It was my impression that carcinoma of the breast was a non-tender firm area discovered by accident rather than by symptoms?—M.D., Poughkeepsie, N.Y.

Answer:

Cancer of the breast is usually painless, but pain may occur in highly malignant breast cancers. Breast carcinoma may be tender and painful before or during menstrual periods.

Ragged Wounds

Question:

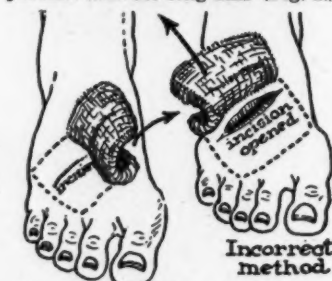
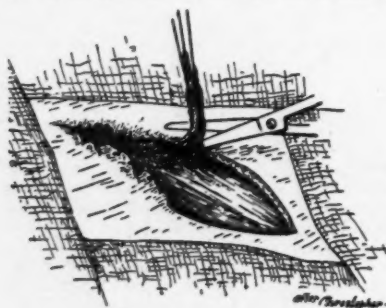
Many small ragged wounds occur in the plant. Although these are cleaned up at once with plain white soap and water, and sutured as soon as possible, the edges often do not heal kindly. Foreign material is first removed by irrigation with hydrogen peroxide or sterile physiologic saline solution. Would the use of a sulfa powder or pencillin powder result in better healing?—M.D., New York City.

Answer:

Your technic sounds good except that there is no mention made of excising

the ragged edges of the wound before suturing. With a scissors or sharp knife, $\frac{1}{8}$ to $\frac{1}{4}$ inch of injured, dirty skin is removed from the wound edges, (Fig. 1) then they are sutured with stainless steel wire.

Make sure that the wounds are not being dressed too often. If there is no pain, swelling or fever, the dressing need not be changed for 4 to 7 days or until the sutures are to be removed. When the dressing is removed, don't let nurses pull it off across the wound but rather parallel with the long axis (Fig. 2.)



Correct, longitudinal removal of dressing

from Christophel

Office Treatment of Syphilis

Question:

Can early syphilis be treated in the office? What doses of penicillin or Mapharsen should be given? What are the results? M. D., Detroit, Mich.

Answer:

Mapharsen and bismuth are readily given under the older plan of once or twice weekly injections, for a series of treatments lasting 6 to 15 months.

At present, Mapharsen and penicillin are not being combined because of increased risk. Over 90 per cent cures for primary syphilis are being reported from the Combined Clinics after use of: (1) Daily injections of procaine penicillin

or penicillin in oil and wax, in doses of 300,000 units each day, for a period of 15 days. (2) Twice daily injections of the same dose for a period of 8 days. Procaine penicillin G in oil and 2 per cent aluminum monostearate may permit the injection twice weekly for 3 weeks, of 600,000 units. (not proved). The above results apply to *primary* syphilis. Secondary or tertiary syphilis require careful study and prolonged therapy, usually with penicillin first and then with Mapharsen and bismuth for those cases which do not respond. (For further information, address: Evan W. Thomas, Dermatology, Bellevue Hospital, New York City).

Rectal Polyps

Question:

I do sigmoidoscopies on every patient who has a bowel complaint. Quite often a polyp or adenoma can be found, which is usually not bleeding. If a long biopsy forceps is used and several sections taken for pathologic examination, the report usually says grade one malignancy or precancerous changes. What gross finding should necessitate the patient being carefully followed? M.D., Little Rock, Ark.

Answer:

Walter Fansler of University of Minnesota, Minneapolis, believes that "Firmness, fixation or induration in a polypoid tumor are almost pathognomonic of

malignant change. Repeated biopsies must be done until a definite diagnosis of carcinoma is established or ruled out." If the polyp cannot be reached with the finger, one can palpate it with the end of the sigmoidoscope.

Don't forget that a biopsy may remove a portion of the polyp which has not yet undergone malignant change. Any tumor of the large bowel must be repeatedly watched or should be electrocoagulated, after biopsy has been taken.

Don't forget that usually polyps or adenomas are multiple; explore colon with barium enema and follow with air contrast films. Malignancy of the colon, if diagnosed early, is one of the most hopeful lesions.

Chilblains

Question:

What is an effective treatment for chilblains?—E. M. G., Chicago, Ill.

Answer:

The injection of synthetic vitamin K was very effective in a small series of cases (D.P. WHEATLEY, M.R.C.S. *British*

Medical Jnl., No. 4530, Nov. 1, 1947). Wheatley feels that chilblains are a reaction to cold in susceptible persons, with redness and swelling of the fingers and toes, and even ulcerations on the joints. After the initial injections, vitamin K (20 mg.) is given by mouth twice daily.

Tetra-Ethyl Ammonium for Frostbite

Question:

Is there any effective treatment of frostbite? I am aware of the use of heparin and dicumarol but cannot employ such anticoagulants because there is no competent laboratory technician available.—M.D., Portland, Maine.

Answer:

A simple method of treatment is the intravenous injection of tetra-ethyl-ammonium in doses of 1 to 5 cc. (This may be obtained from Parke, Davis Company, Detroit by writing directly and asking for "Etamon" for experimental purposes) 2 to 4 times daily. This drug causes vasodilatation by blocking the sympathetic nerves. In severe cases, anticoagulants and tetra-ethyl-ammonium should both be used. Vasodilatation may also be obtained

by caudal or spinal anesthesia, if lower extremities are involved or by stellate sympathetic block for arms. Results are best if treatment is started soon after the frostbite.

Yeager (G. H. Yeager: *Southern Medical Journal*, 41: 129, Feb. 1948) reports remarkable recovery in frostbite of hands and feet, without residual damage after tetra-ethyl-ammonium alone. These cases presented coldness, waxy pallor or cyanosis and anesthesia.

K. Lange reported on the use of anticoagulants (*New England Journal of Medicine*, 237:383, 1947).

A simple method of treatment is to heat the rest of the body and to leave the affected extremities out in the cool air. *Never apply heat to an extremity with poor circulation.*

Frostbite

Question:

How may one prevent the development of gangrene in patients suffering from frostbite?—M.D., Canada.

Answer:

Following exposure to cold, the red blood cells agglutinate and form masses which block the arterial tree. Gangrene may follow. If heparin is given within

48 hours after exposure and continued for 7 to 9 days, the masses of red blood cells do not form.

The plasma that escapes from the permeable capillaries, and which ordinarily forms blisters and deposits of fiber, is kept in a liquid state by the heparin. For fuller details see K. LANGE in *New England Journal of Medicine*, Sept. 11, 1947.

Uses of Streptomycin

Question:

After much publicity at first, I note that the use of streptomycin is not being so widely recommended as before. What conditions encountered in general practice are benefited by streptomycin?—M.D., Peoria, Illinois.

Answer:

Few conditions encountered in general practice require streptomycin, an authority relates conditions amenable to streptomycin: "Tularemia; Hemophilus influenzae meningitis or pneumonia; bacteremia caused by gram-negative or

gram positive organisms which are susceptible to streptomycin, and urinary infections caused by such organisms and by Proteus ammoniae or Aerobacter aerogenes; Klebsiella pneumoniae pneumonia; tuberculosis of the lungs, larynx and trachea; tuberculous sinus tracts; preparation for operations on the colon" (D. R. Nichols: Streptomycin. *Minnesota Medicine*, December 1947, page 1263).

Because of the toxicity of streptomycin and the serious, persistent dizziness and deafness that have occurred after prolonged streptomycin therapy, it should only be employed when indicated.



Thumbnail Therapeutics

Aminoacids for Peptic Ulcer

There are three products we are now testing, all acceptable and all having good points: Squibb's *Casein Hydrolysate*, Mead Johnson's *Protolysate* and National Drug's *Lactalbumin*. In most cases, when one is rejected, another may be taken without difficulty. 350 Gm. of hydrolysate and 500 gm. of sugar (Dextrimaltose) are dissolved in water, into 8 equal feedings, usually taken at 2 hour intervals. If the pain recurs before the next feeding, the intervals may be shortened to 1½ or 1 hour. These feedings are kept up for 2 weeks after the pain ceases; a soft diet is then prescribed plus 5 daily doses of the mixture. — THOMAS P. ALMY, M.D. in *N. Y. State J. Med.*, Oct. 1, 1947.

Jaundice After Plasma Administration

Acute hepatitis, usually with jaundice, followed the administration of dried pooled plasma in 4.5 percent of patients (homologous serum jaundice). Plasma, as well as other forms of transfusion therapy, should be administered only when absolutely indicated. — I. J. BRIGHTMAN M.D. in *J.A.M.A.*, Oct. 4, 1947.

Streptomycin, Sulfadiazine for Brucellosis (Undulant Fever)

The combination of streptomycin injected intramuscularly (0.5 Gm. every six hours for seven days) and sulfadiazine orally (4 Gm. followed by 1 Gm. every four hours for 3 weeks) had yielded more satisfactory results than any other treatment to date. — W. W. SPINK, M.D. (Division of Internal Medicine, University of Minnesota Medical School, Minneapolis, Minnesota) in *J.A.M.A.*, Feb. 7, 1948.

Twitching of the Eyelid

Patients frequently complain of twitching of one or both lids, particularly the upper lid. This is due to a fibrillation of the orbicularis muscle, probably the result of irritation or fatigue. If it continues, the individual's refraction should be checked and compresses of half strength witch hazel and water applied to the eye, as well as a soothing eye wash to be used in an eye cup. — Gifford's "Textbook of Ophthalmology" (Saunders).

Cirrhosis

The daily intravenous injection of crude liver extract (Parke Davis) is beneficial to cirrhotic patients. It should be diluted 20 times with sterile water and given slowly. — W. B. RAWES, M.D. in *Rev. Gastroenterol.*, Oct. 1947.

Hot Baths for Scleroderma

Fever is effective in the treatment of scleroderma. The patient's temperature can be raised to 102° F. by immersion in a hot bath, at home, twice weekly. Later, baths may be used which cause a fever up to 105° F. The patient's pulse, temperature and respiration are watched every five minutes. Marked improvement occurred in patients treated under such conditions. Intravenous typhoid vaccine or the inductotherm will also produce fever. — C. C. DENNIE, M.D. (1524 Professional Building, Kansas City) in *Southern Medical J.*, Oct. 1947.

Testosterone for Increasing Libido

The injection of 50 to 200 mg. of testosterone often increases a woman's sex desire. — R. B. GREENBLATT, M.D. in "Office Endocrinology" (Thomas).

Diagnostic Pointers



Acute Abdominal Pain

When symptoms are not typically diagnostic in patients with acute abdominal pain, the injection of a few drops of epinephrine in a 1 to 1000 solution may reverse the picture and effect relief without surgery. This phenomena was demonstrated in $\frac{1}{2}$ of patients with acute abdominal crisis of allergic origin.

Benedryl and parabenzamine should now be used in conjunction with epinephrine as a diagnostic and therapeutic approach. — GEORGE J. THEOBOLD, M.D., (Wichita Falls, Tex., 1310-9th St.) in *Tex. State Jnl. of Med.*, Oct. 1947.

Undiagnosed Skeletal Symptoms

Cases presenting: 1. Bone cysts, 2. pathologic fractures, 3. renal calculi, 4. "giant cell" bone tumors, or 5. generalized decalcification should be suspected of having primary hyperparathyroidism (a tumor of the parathyroid glands, removal of which cures the patient). — ARTHUR H. WELLS, M.D., (St. Luke's Hospital, Duluth, Minn.) in *Minn. Med.*, July 1947.

Significance of Amenorrhea

Primary amenorrhea should suggest absence of vagina, imperforate hymen or pregnancy until proven otherwise. All secondary amenorrheas are due to pregnancy, regardless of age or social status, until proven otherwise.—W. J. REICH, M.D. in *American Practitioner*, Feb. 1948

Undiagnosed Diphtheria

True membrane formation does not always occur in faucial diphtheria. Edema of the pillars and apparent peritonsillar abscess ("Two day quinsy") were diagnostic criteria.—J. H. BOLTON, M.D. in *Brit. M.J.*, Mar. 22, 1947.

"Spotting"

Vaginal "spotting" or slight bleeding should make one suspicious of ectopic pregnancy and malignancy, if occurring during the child bearing period; all bleeding occurring after the menopause is considered due to cancer until proven otherwise.—M. J. NECHTOW, M.D. in *American Practitioner*, Feb. 1948.

Diabetes and Hypertension

The diagnosis of intercapillary glomerulosclerosis can be strongly suspected in patients who have diabetes mellitus of long standing, albuminuria, hypertension, renal insufficiency and mixed vascular and diabetic retinopathy. —L. L. HENDERSON, M.D., et al (Mayo Clinic) in *Am. J. Med.*, Aug. 1947.

Non-Asthmatic Wheezing

Wheezing confined to one area of a lung suggests a nonasthmatic process. Rales plus asthmatic bruits suggest pneumonitis or bronchiectasis. An "asthmatic" patient lying down should be suspected of having some other disease. If no history of nasal symptoms before or with an asthmatic condition can be obtained, caution should be exercised in making a diagnosis of allergic asthma.—M. I. LOWANCE, M.D., in *South. Med. & Surg.*, Aug. 1947.

Ectopic Pregnancy

The most elusive of all gynecologic diagnoses is ectopic pregnancy which can give a history of amenorrhea and spotting, oligomenorrhea, menorrhagia, or rarely, no menstrual cycle change.—W. J. REICH, M.D. and M. J. NECHTOW, M.D., in *American Practitioner*, Feb. 1948.



New Books

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.

Radical Surgery in Advanced Abdominal Cancer

By Alexander Brunschwig, M.D., Professor of Surgery, University of Chicago. University of Chicago Press. 1947. \$7.50.

One hundred patients are presented in some detail. These patients would ordinarily have been considered inoperable, either for medical or surgical reasons. Exact details are given of the technic used in such extensive procedures as gastrecto-spleno-pancreato-colectomy, total gastrecto-total pancreatectomy-splenectomy and others. Cure can be obtained when it seems impossible beforehand and even when metastatic lesions cannot all be removed, the neoplasm often can be excised with relief of pain and prolongation of life. If this reviewer had an extensive intra-abdominal carcinoma, he would prefer a surgeon of this temperament rather than one who kept loving glances on his mortality record.

Teaching Psychotherapeutic Medicine

An Experimental Course for General Physicians—Edited by Helen Leland Witmer, Ph.D. The Commonwealth Fund. 1947. \$3.75.

The title of this volume does not indicate its interest. It concerns a group of general practitioners who took a postgraduate course at the University of Minnesota in the study and treatment of psychosomatic diseases, just as they are encountered in the office and home and hospital. Much of the material is given in the form of direct clinical observations, with suggestions made by the instructors. The lack of knowledge in this field results in many patients receiving a great amount of physical treatment that they do not need.

Sex Variants

By George W. Henry, M.D., with contributions by Medical Specialists. Published by Paul B. Hoeber, Inc. Price \$8.00.

This is a very complete treatise on the sex variant. The material in this volume will be very useful to the general practitioner, psychiatrists, educators, everyone who is concerned with the medical, legal, or social problems of homosexuality. There are 80 case histories, with autobiographies in the subject's own words. There are genealogical charts and a chapter on the gynecology of homosexuality which is profusely illustrated with many original drawings. This book is one of the most complete studies on the sex variant that this reviewer has yet to come across, and one to be recommended very highly.

The Essentials of Obstetrics and Gynecology

By William Albert Scott B.A., M.B., F.R.C.S. (Can.), F.R.C.O.G. (Eng.) Professor of Obstetrics and Gynecology. And H. Brookfield Van Wyck B.A., M.B., F.R.C.S. (Can.), F.R.C.O.G. (Eng.) Assistant Professor of Obstetrics and Gynecology, University of Toronto.—Lea and Febiger. 1946. \$5.50.

The Essentials of Obstetrics and Gynecology A masterpiece of condensation in a small text, complete with clear, unusual illustrations. Many practical pointers are given. The student will find this outline easy to follow.

Shoot that Needle Straight

By Robert Rantoul with illustrations by W. Joseph Carr.—Bruce Humphries, Inc. 1947. \$2.75.

An uninhibited autobiography of a boy diabetic who tells all. His adventures in this country and in Germany are interesting, even if a few, such as the emergency removal of a broken hypodermic needle on a train, seem unbelievable.

Your Own Story

Sex Story For Children By Marion L. Faegre, Assistant Professor of Parent Education, Institute of Child Welfare, University of Minnesota, Minneapolis. University of Minnesota Press.

A short, easily read book for children who wish to know how life starts, where babies come from, how they are fed and so on.

The Psychology of Abnormal Behavior

By Louis P. Thorpe, Ph.D., and Barney Katz, Ph.D. Published by The Ronald Press Company. Price \$6.00.

This is a textbook for college and university courses. It will be found very worthwhile in courses dealing with mental hygiene, child development, clinical psychology, et cetera. There is much valuable material contained herein. It is an excellent book of its type as the authors are very broad and accept the contributions of more than one school of psychology.

The Occasion Fleeting

By Hugh Barber, F.R.C.P.—H. K. Lewis & Co., Ltd. London, Eng. 1947. \$3.75.

One of those delightful books of reminiscence by an older physician who is at once a philosopher and a student.

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